

REMARKS

Claims 1-7 are now in the application. By this Amendment, claim 7 has been amended to correct an informality but not to limit the claim scope. No new matter has been added.

Entry of the amendments is respectfully requested as they merely obviate an objection as suggested in the Office Action. Applicants respectfully submit that the amendment to dependent claim 7 does not create new issues or requires further search.

Claim 7 is objected to for an informality because claim 7 should recite a polymer material. Claim 7 has been amended as suggested in the Office Action.

Claims 1-3, 5, and 6 have been rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,010,111 to Hahn et al.

Claim 1 recites, among other features, (i) a low molecular weight styrene copolymer and (ii) a high molecular standard polystyrene (GPPS). The high molecular standard polystyrene is a homopolymer and not a copolymer. At least these features of independent claim 1 cannot reasonably be considered to be suggested in Hahn.

The Office Action asserts, at page 6, that Hahn teaches, at col. 1, lines 49-52, the use of polystyrene homopolymer and the use of styrene copolymers. The Office Action further asserts, at pages 2-3, that Hahn teaches expandable styrene polymers having one polymer component with a mean molecular weight MW of 60,000 to 200,000 and a second polymer component with a mean molecular weight of 500 to 5,000.

Applicants respectfully submit that the two polymer components in Hahn have the same molecular composition, i.e., are both homopolymers or copolymers. Hahn fails to teach that one component is a homopolymer and that the other component is a copolymer. In particular, Hahn fails to teach that the high molecular weight component is a homopolymer and the low molecular weight component is a copolymer.

Applicants respectfully submit that a citation has to teach the combination of all of the features of a claim to be anticipating. Specifically, as set forth in MPEP 2131, a “claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Moreover, the “elements must be arranged as required by the claim.” *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Hahn, however, fails to teach that the low-molecular component is a copolymer and the high-molecular component is a homopolymer. Specifically, the passage at col. 2, lines 20-24, of Hahn on which the Office Action relies sets forth that a high expansion capacity can be achieved if component (a) contains 0.1% to 10% by weight of a styrene polymer having a mean molecular weight of from 5 to 5,000. This low molecular weight sub-component, however, has the same composition as the high-molecular weight component.

Applicants note that Hahn specifically refers to a mixture when discussing polymers of different chemical compositions. For example, Hahn teaches, at col. 2, lines 28-37, that styrene-acrylonitrile copolymer comprising 0.1 to 2% acrylonitrile is distinguished by substantial absence of shrinkage. Similar properties are exhibited by a mixture of polystyrene and styrene-acrylonitrile copolymer comprising 0.5 to 5% acrylonitrile.

The teaching of Hahn at col. 2, lines 20-24, however, is not directed to a mixture of polymers of different chemical compositions but to principal component (a). As such, in one embodiment the high- and low-molecular weight components of Hahn may be polystyrene and in another embodiment may be a styrene copolymer. Nevertheless, Hahn fails to explicitly disclose that the low-molecular weight component is a copolymer and the high-molecular weight component is a homopolymer. Thus, Hahn fails to teach the combination of features as they are recited in independent claim 1.

Accordingly, Hahn fails to teach the combination of all of the features of claim 1 and the rejection necessarily fails.

Claim 4 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Hahn in view of EP 0 126 459 to Biglione et al.

The Office Action relies on Biglione for suggesting blending polystyrene and blowing agent at a temperature of 160 °C. Biglione is not applied in a manner to cure the deficiencies of Hahn discussed above.

Further, at page 6, lines 9-11, the Office Action asserts that claim 4 is not directed to a process for obtaining styrene polymers but instead for a process for preparing expandable, pelletized styrene polymer materials from a mixture of polymers.

Applicants respectfully submit that claim 4 recites that the mixture of styrene polymers comprises from 99.9 to 70% by weight of standard polystyrene, i.e., a homopolymer. For the reasons set forth above, Hahn fails to teach this feature of claim 4.

Claim 7 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Hahn.

As appreciated by the Examiner, Hahn fails to teach that the high-molecular weight component has a molecular weight of from 220 000 to 300 000 g/mol. However, the Office Action asserts that the molecular weight ranges are close enough so that a skilled artisan would have expected the corresponding foams to have the same properties.

Applicants note that Hahn teaches that for a preferred embodiment the molecular weight is from 130,000 to 180,000. Thus, the difference in molecular weights between the preferred embodiment of Hahn and claim 7 is at least 40,000. A skilled artisan would consider such a difference to lead to different properties.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 22-0185, under Order No. 12810-00264-US1 from which the undersigned is authorized to draw.

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Respectfully submitted,

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